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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,843	02/15/2001	James Alexander Reeds III	1999-0274	2575
7590	10/18/2005		EXAMINER	
Charles A Mirho 112 W 37th St Vancouver, WA 98660			DINH, MINH	
			ART UNIT	PAPER NUMBER
			2132	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/783,843	Applicant(s) REEDS ET AL.	
	Examiner Minh Dinh	Art Unit 2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 37-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

1. This action is in response to the RCE filed 08/01/2005. Claims 29-36 have been cancelled; claims 37-42 have been added.

Response to Arguments

2. Applicant's arguments with respect to claim 37 have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendments have necessitated a new search and new grounds of rejection.
3. Applicant's arguments filed 08/01/2005 with respect to claims 41-42 have been fully considered but they are not persuasive. Applicant argues that Ahmed does not suggest calculating a checksum for a packet of a first communication layer and including the checksum in an encrypted packet of a lower communication layer. Ahmed discloses a layer-oriented network architecture in which data packets from a network layer (i.e. TCP/IP) (fig. 3A, element 102E) are sent down to a subnetwork layer for encryption (fig. 3A, element 102D; col. 11, lines 1-12). Although Ahmed does not explicitly disclose that a checksum is generated in the network layer at the sending end and is verified at the receiving end, this feature is inherent to the TCP protocol.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 37-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 37 and 41, the claims recite the limitation "a network layer packet comprising the subnetwork layer packet" (claim 37, lines 4-5) and "including the encrypted sub-network layer packet as part of the network layer packet" (claim 41, lines 4-5). These features were not disclosed in the Specification as originally filed and, therefore, are considered new matter. Claims that are not specifically addressed are rejected by virtue of their dependency.

6. Claims 37-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is well known in the art of data communications that data to be transmitted goes down the protocol stack from higher communication layers to lower communication layers, and that each layer adds additional control data to the data received from the upper layer so that the packet generated at the lower layer includes the packet generated at the upper layer. Regarding claims 37 and 41, the claims recite

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the limitation "a network layer packet comprising the subnetwork layer packet" (claim 37, lines 4-5) and "including the encrypted sub-network layer packet as part of the network layer packet" (claim 41, lines 4-5). However, the disclosure fails to teach how a network layer packet comprises the subnetwork layer packet or how to include the encrypted sub-network layer packet as part of the network layer packet. Thus, the disclosure fails to enable one skilled in the art to make and use the claimed invention. Claims that are not specifically addressed are rejected by virtue of their dependency. Therefore, a data packet of an upper layer cannot comprise or include a data packet generated by a lower layer.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 41-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Ahmed et al (6,747,961). Regarding claim 41 being representative of claim 42, Ahmed discloses a layer-oriented network architecture in which data packets from a network layer (i.e. TCP/IP) (fig. 3A, element 102E) are sent down to a subnetwork layer for

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encryption (fig. 3A, element 102D; col. 11, lines 1-12). Although Ahmed does not explicitly disclose that a checksum is generated in the network layer at the sending end and is verified at the receiving end, this feature is inherent to the TCP protocol. The Examiner provides a separate reference to show the inherency of a checksum value in TCP protocol.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed in view of Davis et al (6,643,815) and Menezes et al. ("Handbook of Applied Cryptography").

Regarding claims 37-39, Ahmed discloses method and system in which a sender and a receiver communicates with each other using an identical protocol stack at each side (fig. 3A). Ahmed further discloses that network layer data packets generated at the network layer (i.e. TCP/IP) at the sender (fig. 3A, element 102E) are sent down to a subnetwork layer (fig. 3A, element 102D) for encryption (col. 11, lines 1-12). The encrypted network layer data packets continue to go down the protocol stack and are sent over a communication network to the receiver. Once received the encrypted

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network layer data packets go up the protocol stack and are decrypted at the corresponding subnetwork layer. The decrypted network layer data packets are then sent up to the network layer (col. 11, lines 1-12). Although Ahmed does not explicitly disclose that a checksum for each network layer packet is generated in the network layer at the sender and that the network layer at the receiver verifies the checksum of the received TCP packet, these features are inherent to the TCP protocol.

Ahmed teaches encryption and decryption of network layer packets; however, Ahmed does not teach detecting a loss of cipher synchronization. Davis discloses verifying the checksum of a transmitted packet to detect a loss of cipher synchronization (col. 2, lines 4-33; col. 7, lines 14-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Ahmed method to verify the checksum of a transmitted packet to detect a loss of cipher synchronization, as taught by Davis. The motivation for doing so would have been to detect a loss of cipher synchronization.

Ahmed does not disclose that the encryption algorithm is a stream cipher. Menezes discloses using stream ciphers (p. 161, see 6.1 Introduction). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Ahmed to use a stream cipher, as taught by Menezes, because stream ciphers are advantageous in situations where transmission errors are highly probable.

Regarding claim 40, Ahmed does not disclose re-synchronizing a stream cipher with a transmitter once a loss of cipher synchronization is detected. Davis further

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discloses re-synchronizing a cipher with a transmitter once a loss of cipher synchronization is detected. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Ahmed further to re-synchronizing a stream cipher with a transmitter once a loss of cipher synchronization is detected, as taught by Davis. The motivation for doing so would have been to allow re-synchronization when a loss of cipher synchronization is detected.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,697,490 to Mizikovsky et al.

U.S. Patent No. 6,848,008 to Sevanto et al.

U.S. Patent No. 6,944,299 to Mallela et al.

Stevens, "TCP/IP Illustrated, Volume 1 – The Protocols"

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dinh whose telephone number is 571-272-3802. The examiner can normally be reached on Mon-Fri: 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MD

Minh Dinh
Examiner
Art Unit 2132

10/14/05


GILBERTO BARRON JR.
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